FERMI NATIONAL ACCELERATOR LABORATORY

TARGET: SCIENCE AND ENGINEERING PROGRAM

FACT SHEET

2005

GENERAL INFORMATION ABOUT FERMILAB

The Fermi National Accelerator Laboratory (popularly known as "Fermilab") is operated by Universities Research Association, Inc. (URA) of Washington, DC; a consortium of 90 major research oriented universities in the United States and in Canada. URA holds a contract with the U.S. Department of Energy, which provides funds for the operation of the Laboratory.

Location

The Laboratory is located on 6,900 acres in Batavia, Illinois about 30 miles west of Chicago, north of the Illinois East-West Tollway (Interstate 88, the Farnsworth/Kirk exit). The headquarters of the Laboratory are located in Wilson Hall, a 16-story structure near the main entrance to the Laboratory on Kirk Road, opposite Pine Street, Batavia. The suburbs of Aurora, Batavia, St. Charles, Geneva, West Chicago, Wheaton, Warrenville, and Naperville are within 20 minutes.

Research of Fermilab

The experimental research conducted at Fermilab is known as “high energy physics” or “particle physics”. Its purpose is to explore the basic structure of matter. Previous generations of this basic research have revealed the structure of the atom, then the nucleus of the atom. Each year, teams of scientists from various universities and other nations submit research proposals and Fermilab personnel assist these teams in constructing and modifying the equipment that is used in the experiments. Analyzing the data that is gathered and tabulating results determine the success of the experiment.

Fermilab’s accelerator

Learning more about the behavior of particles has become possible through using accelerators of higher and higher energies. Fermilab's machine

- is a synchrotron which accelerates protons to 8 - 1000 GeV [giga (billion) electron volts].
- has no "product", nor does it produce electrical power, as does a nuclear reactor.
- is a scientific instrument (in a sense, a giant microscope) that permits study of atomic nuclei, searching always for the basic building blocks of nature.

PROGRAM INFORMATION

Who is the target audience?

The TARGET: Science and Engineering Program is primarily directed at recruiting underrepresented minority groups (Black, Hispanic, and Native American) in the disciplines of mathematics and the sciences.

What are the program goals?

The goals of the program are to:

1. Identify and encourage scientific and engineering reasearch ability among members of underrepresented minority group.
2. Increase their representation in the sciences and engineering.

STIPEND

Each student will be paid $7.00 an hour for 20 hours of work per week, plus a $40 stipend for the classroom hours.

TRANSPORTATION

Bus service is provided to Fermilab from a convenient and safe CTA location, which is the Congress Line at Des Plaines Avenue in Maywood (along the Eisenhower Expressway). Details are arranged after the program's participants are selected. This is not a residential program. Students are required to travel to the laboratory each day.

QUALIFICATIONS

- Participants must have been enrolled in algebra in the ninth grade and at least be in the process of taking geometry during the tenth grade.
- Students must have a 3.0/4.0 grade point average or above to apply.
- Students must have completed evaluations from their **math** and **science** teachers at school; references from a program administrator, e.g., Early Identification Program and the Upward Bound Program will also be accepted.

Students must provide at least one of the above types of references, or both, if they have participated in any of the above mentioned programs.

DURATION OF PROGRAM

The program will run six weeks, incorporating both the teaching and the work experience. The program will be held at Fermilab and will be conducted five days per week. The program will run from Monday, June 27th through Friday, August 5, 2005, unless otherwise notified. During the duration of the program, students are **required** to participate the entire six (6) weeks of the program. Students who have made prior commitments that will overlap this program **should not** be given an application. **There will be no exceptions!**

STUDENTS' DAY

The students' day will be divided into two segments, as follows:

a) Morning Hours - in this period, students will go to their assigned areas to work along with Fermilab professional personnel. It should be understood, that because of students' level of schooling and the fact that they are under 18 years of age, certain work areas within the Laboratory will be inappropriate for assignment. As a result of these factors, some job assignments and tasks may not seem as intricate as others, but they are important and are small aspect of a very complex scientific project. All supervisors involved in the program are requested to explain to the student the importance of their job assignment and how it fits into the overall mission of the Laboratory. The work assignment is designed to give the students an understanding and picture of what a technical career involves.

b) Afternoon Hours - During these hours, students will be offered instructional and laboratory time under the direction of a team of teachers. Students will be transferred from the Laboratory to Naperville Central High School by bus at our expense. This phase of the program will run from 1:00 PM to 4:00 PM each day. These sessions will be designed to allow students to work on individual and group projects. This aspect of the program allows the student to be both engineer and scientist by giving the students problems and development work. At the end of the six-week program, students will be expected to complete an oral presentation. This presentation should describe the science methodology, results, and recommendations for the project.

APPLICATION PROCEDURE

Applicants should submit completed application forms, transcript, both reference forms to:

Mrs. Dianne M. Engram
Equal Opportunity Manager
Fermi National Accelerator Laboratory
Post Office Box 500 - MS 117
Batavia, IL 60510

Deadline for completed applications, references, and transcripts is April 11, 2005.